

## **Birds**

### **Learner Outcomes**

The learner will

- Use form and function to identify and understand birds.
- Design a bird game that demonstrates the relationship between form and function of various bird parts.

### **Background**

There are about 9,900 species of birds in the world. They are vertebrates, having a jointed internal skeleton with two forelimbs and two hind limbs, a brain encased in a strong bony container, and a main nerve route in the body carried down the center of the back inside a spine. Birds are the only living organisms with feathers.

The teacher will need to use supplement number 4.3 and library reference books to plan and facilitate a discussion about basic bird information. Contacts and books that the teacher might wish to utilize in preparation of this, and other lessons included in this project, are as following:

- *The Audubon Society Encyclopedia of North American Birds*, by John K. Terres; Knopf, 1980.
- *Manual of Ornithology: Avian Structure and Function*, by N. Proctor, P.J. Lynch; Yale University Press, 1993.
- *Birding for Beginners*, by Sheila Buff; Lyons & Buford Publishers, 1993.
- *A Field Guide to the Birds of North America*, edited by the National Geographic Society; National Geographic Society, 1987.
- *Peterson First Guide to the Birds*, by Roger Tory Peterson; Houghton Mifflin, 1986.
- *New Mexico Bird-Finding Guide*, by Dale A. and Marian A. Zimmerman, and John N. Durrie; New Mexico Ornithological Society, 1992.
- American Birding Association, PO Box 6599, Colorado Springs, CO 80934.
- Cornell Laboratory of Ornithology, 159 Sapsucker Woods Road, Ithaca, NY 14850.
- New Mexico Ornithological Society, University of New Mexico, Department of Biology-NMOS, Albuquerque, NM 87131.

### **Materials**

- Supplement numbers 4.1 through 4.3
- Bird reference books
- Various craft/paper supplies for games

### **Assessments**

- Game designs
- Game participation

Activity #1

#### **Pre-test**

15 minutes

### **Procedure**

The teacher will

- Administer pre-test.

Activity #2

#### **Bird Facts**

40 minutes

### **Procedure**

The teacher will

- Use the outline on supplement number 4.3 to discuss basic information about birds.

Activity #3

#### **Form and Function Games**

2 class periods

### **Procedure**

The teacher will

- Split students into one of the following teams: Beaks, Wings, Tails and Feet.
- Distribute supplement number 4.3 to each team.
- Instruct students to use information on the supplement to plan their research.
- Have each team design a game (jeopardy, etc.) to demonstrate the relationship between form and function of their particular bird part. Allow at least one class period to construct the game.
- On the following day, give each team 10 minutes to play their games with the rest of their classmates.